

NOVEMBER/DECEMBER 2025
FBT51/CBT51 — GENETIC ENGINEERING

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the function of a polynucleotide kinase?
2. What does Terminal deoxynucleotidyl transferase do?
3. List some phage vectors.
4. What is PUC vector?
5. Define polymerase chain reaction.
6. What are primers?
7. Why is 16Sr RNA used to identify bacteria?
8. What is VNTR?
9. What are recombinant proteins?
10. Define Gene library.



SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Explain about DNA polymerase and its function.

Or

- (b) Summarize on reverse transcriptase and its role in genetic engineering.

12. (a) Illustrate the construction of PBR322.

Or

- (b) Explain plant vector with suitable example.

13. (a) List the applications of PCR.

Or

- (b) Categorize the variants of PCR.

14. (a) Explain briefly about sanger chain termination method.

Or

- (b) Explain briefly the steps involved in AFLP.

15. (a) Highlight the applications of DNA finger printing.

Or

- (b) Organize the steps involved in the production of recombinant insulin.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss in detail about cutting and joining enzymes.
17. Elaborate on Bacterial artificial chromosomes.
18. Explain the principle and steps involved in PCR.
19. Explain the protocol for DNA Sequencing by Maxam-Gilbert method.
20. Describe about construction of Genomic DNA library.

